

Next Stop Azores—Change for Portugal and All Points East

Aviation Gives New Importance to Island

AIRMEN are preparing to make the Azores Islands the aerial junction of the future. They predict that this garden spot of the Atlantic, with its mild climate and other health giving qualities, will become the stopover for all overseas travel by airplane and dirigible. They point out that the exploit of the United States navy in effecting a crossing has virtually put the islands on the map, as far as the general public is concerned; that for many years problems of construction will limit the overseas route to the Azores, where fuel and other supplies may be replenished.

Inventors of the flying boats are emphatic in their statements that not for many years will this kind of craft be able to make a non-stop flight with passengers and baggage the entire 2,000 miles, or slightly less, between Ireland and Newfoundland. They place their fingers on three important air lines uniting the new world with the old.

One is that taken by the navy in its epochal flight from Newfoundland to the Azores, thence to Lisbon, Portugal. Roughly, the Azores are 1,200 miles from Newfoundland and 800 miles from Portugal.

Another is the non-stop route between Newfoundland and Ireland, an approximate distance of 2,000 miles between nearest coast lines and appropriate in every way for the international mail service.

And the other is the New York, Azores and Plymouth, England, line, by far the most important of all, so far as the travelling public is concerned, because each terminal provides transit and communication facilities, while the islands themselves constitute a junction whereby passengers may transfer for any of the Atlantic Coast countries on the continent. Here also will be found service and repair stations.

Wind drift will be overcome with the gradual perfection of the wireless direction finder, by which the pilot and navigator may communicate with ships and land stations and determine the exact course they are pursuing, at the same time learning their location and the number of degrees they have drifted. Weather conditions can be met with adequate reports, and the governments of the United States, Portugal and Great Britain are co-operating in providing correct meteorological data.

One of the larger manufacturers of aircraft in the United States is interested in a corporation to promote transatlantic travel by airplane. The idea is to establish scows or barges at various points in mid-ocean whereby a plane requiring fuel could alight and secure its supply. The only handicap would be the weather; the most dangerous proceeding would be to establish a supply barge and then have it swept away by a storm, to go drifting helplessly in the course of fast liners and prove a deadly menace to all ocean traffic.

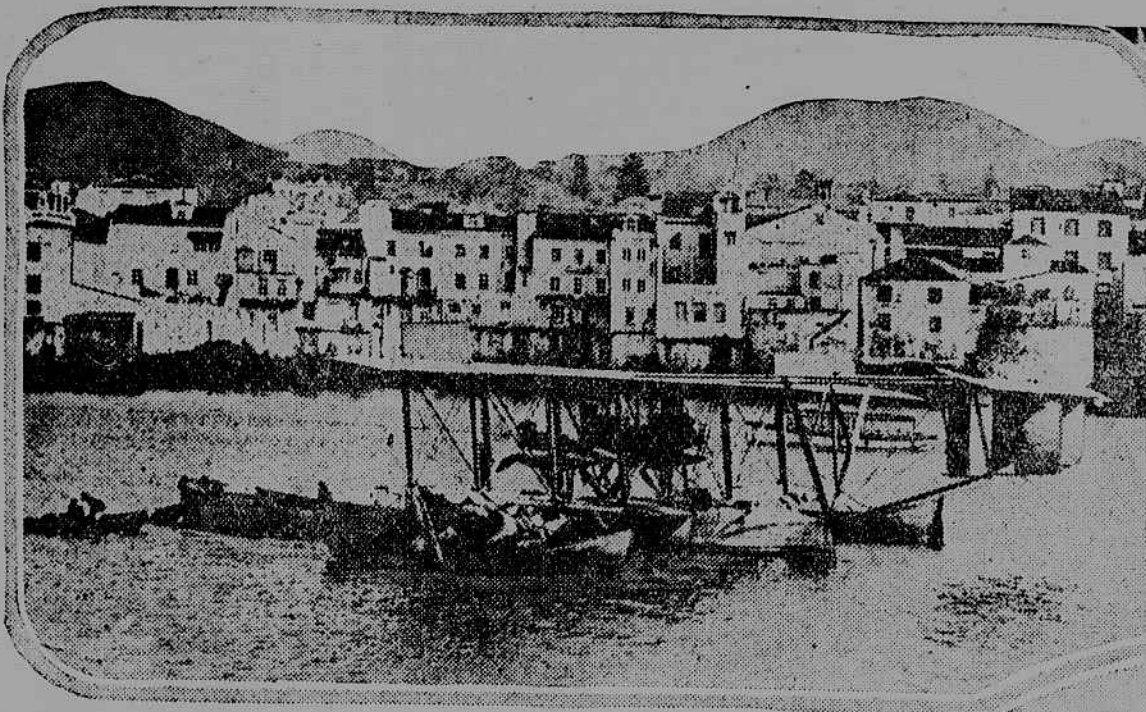
And right here is where the Azores fit into the scheme with a nicety that is nothing if not providential.

Rising to a height of more than 7,000 feet—as in the case of Pico—and at the lowest 350 feet above sea level, as on the island of Corvo, the islands form an oasis in a desert of water and mist and heavy banks of clouds—clouds that rise off the water in the morning and blot out everything from view, narrowing the horizon to a few feet for the anxious aerial pilot and his navigator.

Already navigators are at work on instruments to eliminate these difficulties. They count on the Azores with all its mists and clouds to furnish them with correct weather reports, radio stations and rescue ships in case of accident to the planes.

Before Columbus

And a stopover at the Azores will not be in the nature of a hardship to overseas passengers. Though little known to the majority of



The damaged NC-3 at Ponta Delgada

Americans, these islands have long figured in the eastern Atlantic traffic. They appear on incomplete maps of the early fourteenth century, nearly 100 years before Columbus discovered America.

Phœnician coins discovered on the islands strengthen the belief that they were visited by the Carthaginian traders. At any rate, they were occupied by the Portuguese and settled between 1431 and 1461 and during the next century were terminals for the Spanish fleets coming from America. Early ocean traffic required them for ports, both for food and water supplies and for opportunities to repair storm-tossed craft.

English sea rovers have also used the islands for one purpose or another since that time. The Eng-

lish ships coming up from India were often compelled to put up a running fight with their maritime enemies, the Spanish. And the Spanish, in turn, were harassed by the English while returning from the New World. The Azores, with their peaceful agricultural settlers, have remained a junction, even throughout the development of the steamship.

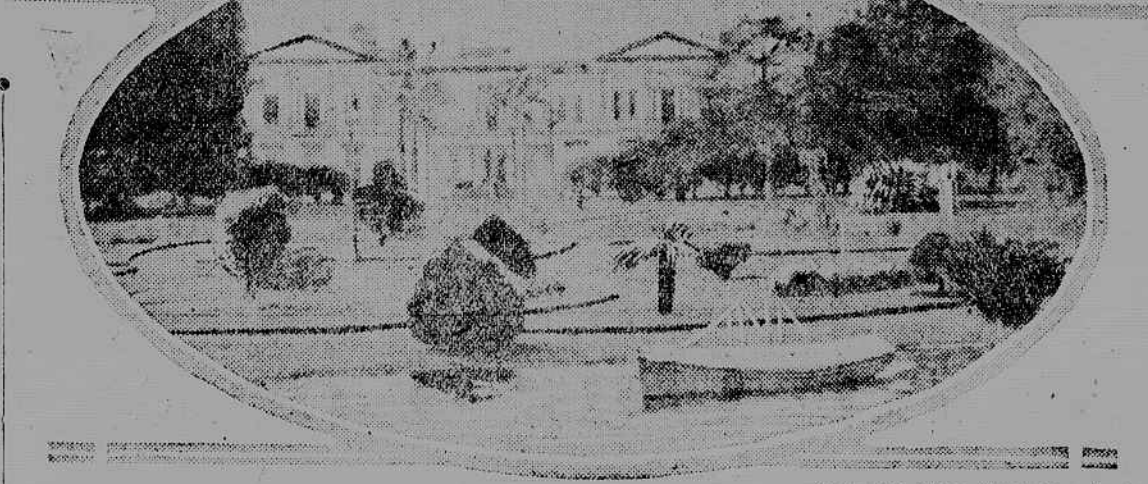
Boats leaving France for America take the Azores route on learning of a storm. Ships within 1,000 miles turn and run for the Azores at the first sign of trouble, either aboard ship or among the elements.

What would a tourist find, for example, if his plane dropped him at Ponta Delgada, the capital of St. Michael's? On approaching the islands he would find a great cloud

of dense, gray mist resting on the horizon. Nearer it becomes a reddish brown dotted with mouldy green.



Community washing in an Azores village



One of the many country estates

Veering to the southeast toward Ponta Delgada he would see the city, first as a formal white line, or, if the gaze could pierce the cloud, it

would be a broken line extending back from the sea wall in a series of white splotches, small conical hills of bright green and stiff white

houses edged with black trimmings. The white lines would become walls the next instant, disclosing orange gardens, and the passenger would drop into a little harbor cluttered with tramp sailing ships of a half-dozen nations. The harbor is a busy one, far superior in commercial aspect to the town itself, which has been maintained in all its primitive state by the early Portuguese settlers. The admixture of Moorish and Flemish has not served to quicken the pace of the community, nor that of any other in the island groups, for that matter.

The clouds are most dense in the morning. Toward noon the humidity is a source of discomfort if one is in the city, but not so on the mountain slopes. The thermometer has never been

Long a Haven for Mariners—Now for Airmen

known to go below 48 degrees in January, the mid-winter month, and it never has risen above 80. The average is 72 the year round.

The Weather Is Always Mild

Some of the finest homes in the world have been built there by wealthy and often titled Continentals, principally Portuguese. In the farming districts (and there are large farms among the various islands) many of the natives wear costumes—entirely red—short jackets, vests and knee breeches, with gaiters buttoned over the feet, which are often bare. When anything at all is worn on the soles it usually consists of leather sandals.

These people are of retiring disposition, rarely visiting the communities for fear that some one will laugh at them and their dress. In the towns, however, German, English, Portuguese and American commercial visitors have introduced modern modes of dress and influenced social and business life.

The natives do not overwork, unless in caring for the many travellers who come over the sea in search of the health they always find, either climbing the volcanic slopes or bathing in the warm baths of Furnas.

As for scenery, where will one find pine and elm trees growing in the same neighborhood with oranges, bananas, citrons and pomegranates? Long known only as the little islands where there are no snakes, the Azores are believed to have a destiny as replete with adventure as they are full of volcanic crevices and craters, all extinct, but alive with possibilities.

How It Felt to Try the Atlantic in 1910 Making One's Way

THERE is an elderly, quiet gentleman living on Washington Heights who is conclusive proof that New York City and the rest of the world has a twenty-four-hour memory or less.

His name is Walter Wellman, and in 1910 he attempted a transatlantic crossing in a dirigible. Clippings from newspapers in the files a bit yellowed around the edges and dated between October 15 and 19, 1910, give him between two and four columns on the first page.

About that time Mr. Wellman, of Washington Heights, and five companions were suspended over the Atlantic Ocean in a dirigible balloon, wondering whether their destination, determined by fate and the winds because the "stabilizing" apparatus was working badly, would be Europe, the Azores or Davy Jones's locker.

Mr. Wellman started other things before he started on his flight over the Atlantic from Atlantic City on October 15, 1910. In 1879 he started "The Cincinnati Evening Post"; in 1894 he started for the North Pole and reached 81 degrees north latitude; in 1898-1899 he started again, and discovered many new islands, reaching 82 degrees north latitude; during the spring of 1906 he started in the airship-exploration operations.

The America was born, built and blown in 1909. On August 15 of that year the pioneer was prepared to fly with three companions to where others had died in venturing.

"Never Out"

For four years Mr. Wellman had worked toward and planned for this trip. He was certain that everything was in readiness for a successful flight. Two automobile sledges were to roll beneath the dirigible, to continue the party on its way if the thin air deprived the balloon of its buoyancy.

The America got about thirty-two miles away from its point of beginning. Because Mr. Wellman was not killed he merely regarded his failure as a temporary setback. The Salvation Army recently described his feelings in its campaign phrase, "A man may be down, but he's never out." Certain it was that Mr. Wellman came down.

During the early months of 1909 he considered and rejected numerous projects, until his active mind wandered out across the Atlantic

and he determined to follow it in the America. Word swept over all the continents that it would be the "America first" over the well known bounding main.

A huge repository for the dirigible was reared at the juncture of an inlet and the sea. A crew which appreciated death in exchange for adventure and fame as much as did the master of the aircraft was recruited. Melvin Vaniman, famous as an engineer and balloonist, who, one year later, plunged to his death when a gas bag exploded hundreds of feet in the air, was selected as chief engineer. J. Murray Simon was the pilot. A daredevil youth named Jack Irwin, an Australian, enlisted as wireless operator, and Albert L. Loud, another careless young man, as assistant engineer, and John Aubert as an engineer rounded out the crew.

On September 3, 1910, the airship was practically ready to take to the ozone for the European journey. Its destination was marked out no more definitely than England, France or Spain, and anywhere in these countries, as it was understood by the crew that the mechanical propulsion of the ship could be overwhelmed by any great or near great ocean air currents.

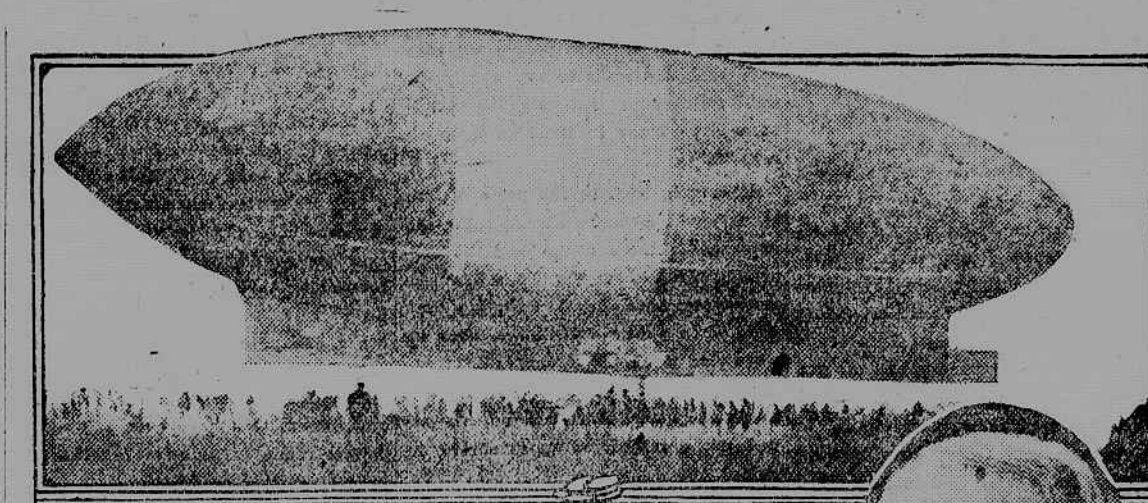
Like a Cigar

The ship was the nearest thing in shape to a cigar which aeronautics has produced. The gas bag was 228 feet long, its greatest diameter was 52 feet, and its contents were 345,000 cubic feet of hydrogen gas.

Eighty tons of sulphuric acid and sixty tons of iron turnings combined in tanks generated the contents, which was twelve times lighter than air. When full the gas weighed 2,150 pounds and displaced air weighing 25,800 pounds.

The contents were well clothed. The balloon itself was composed of three thicknesses of cotton and silk, gummed together with rubber, weighing 4,850 pounds, and reducing the carrying power of the ship to 18,000 pounds.

The car, or as the professionals of the air game call it, the nacelle, was "all first cabin and many yards wide." It was 156 feet long, made of the highest grade of drawn steel tubing and inclosed in rubberized silk and cotton canvas. The tubing was adjusted in trusses, wide at



Walter Wellman and his balloon, The America

the top and tapering toward the bottom, ending in a wooden walk 18 inches in width. The gasoline tank, welded and of drawn steel, was 75 feet long, 18 feet in diameter, and divided into ten compartments. Each compartment contained about 125 gallons of gasoline.

Storage batteries, fed by the engines of the craft, provided current for electric lights and a complete telephone system. A gasoline stove was installed for cooking purposes.

Largely for experimental purposes—Mr. Wellman's trip was to be in the interest of science—an equilibrator, or stabilizer, was attached to the craft. It eventually proved the undoing of the venture, but to the thousands who viewed it as the ship rested twenty feet in the air for more than a month it was one of the most absorbing features.

Its purpose was automatically to regulate the upward and downward course of the ship. It was composed of thirty hollow steel cylinders connected with each other on a universal joint, giving it the greatest flexibility. When the sun heated the gas, the theorists contended, the ship would have a tendency to ascend. But the stabilizer, normally floating on the surface of the sea, would object to the ride in the air and hold the plane to a respectable level. Incidentally, the cylinders of the equilibrator were filled with a reserve supply of gasoline, making the total gas supply of the craft 1,800 gallons.

The Engines

The engines were not, quite naturally, of as vital importance as they are to the planes now daring the journey. They were three in number, two eight horsepower affairs and one ten horsepower service engine. The four propellers were placed one on each side of each engine.

For forty days the above described America hung about At-

lantic City while caricaturists and columnists crudely and gracefully hinted that Mr. Wellman might be contemplating vaudeville instead of transoceanic travel.

A few wheelchairs were creaking along the boardwalk at 7 o'clock on Sunday morning, October 15, when announcement was made that the America would depart that morning, the winds concurring. Like the news of divorce proceedings, the tidings swept the resort. Thousands gathered to where the ship strained at its ropes in the slightly fresh breeze. Nearly one hundred policemen, firemen and life guards held the giant cigar steady. The crew climbed aboard.

They're Off

"We are going for a trial," Mr. Wellman shouted, "and if the going is good, we are going up and over the ocean."

The crowd instinctively recoiled before the restless rolling of the ship. The army of strong men below released their hold on the ropes. In the arms of a crisp zephyr the ship of the sky rose fifty feet in the air and floated off toward Europe. The trailing chain of tanks comprising the equilibrator clattered and tinkled before the playful attacks of the small waves and rattled the only farewell.

Only a tiny motorboat buffeted the breakers and followed in the uncanny shadow cast by this new thing. It returned after a few breathless minutes and passed the word that Mr. Wellman was going quite comfortably to Europe.

The crowd did not break up and scatter to its round of assorted pleasure. The wireless station was the hub of a nervous, inquiring throng. After three hours came the first message from the America. "Going northeast by east; still in fine shape," the crowd read on the bulletin board.

Sunday afternoon waned and no further message was received. Monday slipped by and Wellman and his

crew and craft still remained silent. Incoming steamers reported no sign of the dirigible. Hope was old on Monday night when a brief wireless from Wellman announced that the theoretical equilibrator was not proving practical at all. It was straggling along like a poor relative and straining the big craft in a manner which made Europe seem very far away, he wirelessed, in effect. On Tuesday morning the Royal Mail steamship Trent bobbed up before the world in a prominent rôle by announcing it had picked up the heroic crew from a very sick balloon.

"The weather turned cold and the change of temperature so affected the lifting power of the gas in the great bag that we found it necessary to jettison more of the gasoline and part of the machinery which had been damaged, in order to keep above the waves.

"It was 5:07 o'clock this (Tuesday) morning when we sighted the lights of a steamship which afterward proved to be the Trent. Irwin signalled with a lamp by Morse code 'Stand by, we need you.' She soon neared us and in looking down from the America we could see hundreds of people on her deck looking up at us in wonderment.

"As the Trent approached us we were 300 feet above the sea, but it was apparent we could not hold that altitude long. When she came beneath us one of our crew slashed the canvas covering of our car and lowered a line, which the men aboard the Trent endeavored to catch. Just when it appeared probable that the line would be caught, a gust of wind whirled us away, carrying the line out from the steamer.

"Many times the line was lowered, each time there was a scramble, when the wind would catch us and push us away. Finally the line was caught and made fast aboard the ship, but a strong gust of wind parted it and blew us away. The ship followed us, undiscouraged, but it was evident that this plan would not do. We gave the signal for her to stand by to pick us up, for we would take to the lifeboat."

Mr. Wellman described the delicate task of launching the boat and its narrow escape from destruction. Released from the weight of the lifeboat and crew, the thousands of dollars' worth of America melted into the distance.

up a rolling motion which added to the strain and threatened the entire destruction of the craft if long continued.

"It was a dreadful night for the men aboard the ship. There was much to be done to ease the strain and all did everything possible. At times some would become exhausted and one by one the men would sleep for a time. They went to their hammocks expecting that they would awake to find themselves in the ocean, but all they wanted was to sleep, and they did so."

On 3 o'clock Monday morning the motors were started and the course was set for the Azores. But the wind played another scurvy trick and came at the ship from the northeast, the pilot this time determining to make for the Bermudas. The motors were again shut off. After a trying day Monday Mr. Wellman wired that night:

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So the quiet old gentleman—he was born in Mentor, Ohio, November 3, 1858—passes his years on Washington Heights and reads of overseas flights attempted and accomplished by other daring souls.

SPEAKING at a luncheon of the Aldwych Club recently, Godfrey Isaacs, managing director of the British Marconi Company, told of a new plan his company had for enabling aviators to tell where they were. After mentioning the wireless direction finder, Mr. Isaacs said:

"A further development had given them a new transmitter, which would project into the air a wide divergent beam, something like a searchlight without the light, which would extend over any area required, or, if it was desired, a concentrated beam over some small place, and those beams would convey to the men in the sky automatically the name of the place they were passing over.

"Assuming that a man was passing over the town of Guildford; from the moment he traversed the region over which this beam was playing he would receive the signal, 'This is Guildford,' and would continue to receive that signal so long as he was over Guildford and no longer. In the same way, if he was passing over Windsor Forest he would be told, 'This is Windsor Forest,' and when he came to his aerodrome a beam would tell him 'This is Hendon Aerodrome.' In that way he thought that one of the greatest dangers to pilots in fog and in darkness was disposed of.

"It required very little imagination to see, a little while hence, some thousands or tens of thousands of names being projected into the skies, so that in whatever part of the world an aeroplane might travel, it would be told continuously and automatically where it was. It would be as easy to learn in the skies where they were as in a railway train when they looked out of the window to see the name of a station.

"Similarly these beams could be equipped to lightships or to buoys in fixed and defined positions, so that even when passing over the sea one would know exactly where one was. When that position of things had developed pilots would no longer lose themselves, wherever they might be."

Enlarging on the commercial possibilities of wireless, Mr. Isaacs said:

"A cable required a very big capital outlay, its cost of maintenance was very considerable, and its capacity for traffic was limited. The cost of a wireless telegraph station was moderate, the cost of maintenance was small, and the capacity for traffic was practically unlimited.

"Wireless to-day could do 150 words a minute simplex and 300 words a minute duplex. It would require but a very small mechanical improvement to double and quadruple that number of words transmitted by wireless. He was quite satisfied that as soon as wireless traffic needed the greater speed of transmission mechanical improvements would be introduced, and they would get something in the neighborhood of 600 words a minute."